

## JOINT MESSAGEFORM

SECURITY

CLASSIFICATION - CHANGED TO: ~~SECRET~~ FOR COMMUNICATION CENTER

905-2

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| PRIORITY                      | TYPE MSG (Check)  | ACCOUNTING SYMBOL | ORIG. OR REFERS TO | CLASSIFICATION OF REFERENCE |
| ACTION: OPERATIONAL IMMEDIATE | BOOK MULTI SINGLE |                   |                    |                             |
| INFO: OPERATIONAL IMMEDIATE   |                   |                   |                    |                             |
| FROM:                         |                   |                   |                    |                             |

CHIEF, AFMMD VAFB FIELD OFFICE, VANDENBERG AFB, CALIF

TO: COMDR, HQ AFMMD, LOS ANGELES 45, CALIF

HQ 6594TH TEST WING (SATELLITE), SUNNYVALE, CALIF

LOCKHEED MISSILES &amp; SPACE DIV, SUNNYVALE, CALIF

LOCKHEED MISSILES &amp; SPACE DIV, VAFB, CALIF (COURIER)

DOUGLAS AIRCRAFT COMPANY, VAFB, CALIF (COURIER)

INFO: 1ST MISSILE DIVISION, VAFB, CALIF (COURIER)

AFMMD TECHNICAL EVALUATION STAFF, P.O. BOX 1567, VAFB, CALIF (COURIER)

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SECRET/WDG-16-4 - 1-2-12

LOSA FOR WDZY; 6594TH TW FOR COL MOORE; IMSD/SUNNYVALE FOR DEPT 61-44 (L.F. MORGAN); IMSD/VAFB FOR DEPT 65-44 AND 61-70; DAC FOR MR. HECKMAN. INFO: 1MD FOR COMMAND POST; AFMMD TECH EVAL STAFF FOR MR. FISCHER. SUBJECT: FLASH REPORT OF LAUNCHING OF DISCOVERER XVI (NIGHT SHIFT-PRESTO) FROM VANDENBERG AFB.

1. DISCOVERER XVI COMPRISED OF THOR BOOSTER NR 253 AND AGENA B

ORBITAL STAGE NR 1061 WAS LAUNCHED FROM VAFB SM-75-3, PAD 4, AT

1226:9.2 PST ON 26 OCTOBER 1960. THE PRIMARY LAUNCH OBJECTIVE TO

|                                               |                                   |                |
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| SYMBOL                                        | SIGNATURE                         |                |
| WDG-16-4                                      | <i>[Signature]</i>                |                |
| TYPED NAME AND TITLE (Signature, if required) | TYPED NAME AND TITLE              |                |
| WALTER M. POWELL, JR., MAJOR, USAF            | WILLIAM F. HEISLER, LT COL, USAF  |                |
| PHONE 8-6380                                  | PAGE NR. 1                        | NR. OF PAGES 5 |
| SECURITY CLASSIFICATION                       | Chief, Satellite Systems Division |                |

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|       |      |
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| DATE  | TIME |
| 26    | 0253 |
| MONTH | YEAR |
|       | 1960 |

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# JOINT MESSAGEFORM - CONTINUATION SHEET

SEC

FROM:

CHIEF, AFBMD VAFB FIELD OFFICE, VANDENBERG AFB, CALIF

PLACE THE DISCOVERER SATELLITE WITH PAYLOAD INTO NEAR-POLAR ORBIT WAS NOT ACHIEVED BECAUSE OF THE FAILURE OF THE AGENA D-TIMER TO INITIATE AGENA PROGRAMMED FUNCTIONS. SEPARATION AND IGNITION DID NOT OCCUR.

2. THE LAUNCH TEST OBJECTIVES FOR DISCOVERER XVI WERE AS FOLLOWS (REFERENCE DETAILED TEST OBJECTIVES, LMSD 446404, SECTION 2):

(A) THE THOR BOOSTER MUST POSITION THE DISCOVERER VEHICLE WITHIN 5 NAUTICAL MILES OF THE SPECIFIED NOMINAL BURNOUT POINT WITH A FLIGHT PATH ANGLE WITHIN 4 DEGREES AND A VELOCITY WITHIN 500 FPS OF THE NOMINAL VALUES.

(B) THE AGENA AIRFRAME AND ADAPTER MUST WITHSTAND THE LAUNCH AND FLIGHT ENVIRONMENT.

(C) THE AGENA RETRO-ROCKETS MUST PROVIDE THE THRUST REQUIRED FOR SEPARATION AND THE AGENA PROPULSION SYSTEM MUST PROVIDE THE ADDITIONAL IMPULSE REQUIRED TO ATTAIN ORBITAL VELOCITY.

(D) THE AGENA ELECTRICAL POWER SYSTEM MUST PROVIDE THE ELECTRICAL POWER REQUIRED FOR SATISFACTORY SYSTEMS OPERATION.

(E) THE AGENA GUIDANCE AND FLIGHT CONTROL SYSTEM MUST DERIVE THE TIME TO INITIATE ORBITAL BOOST AND THE VELOCITY-TO-BE-GAINED DURING ORBITAL BOOST AND MUST INITIATE AND TERMINATE ORBITAL BOOST IN ACCORDANCE WITH THESE VALUES. THE SYSTEM MUST ALSO MAINTAIN PROPER VEHICLE ATTITUDE AFTER SEPARATION AND MUST CONTROL THE TIME AND SEQUENCE OF CERTAIN SPECIFIED OPERATIONS.

(F) THE AGENA TRACKING AND COMMUNICATIONS SYSTEM MUST PROVIDE A CONTINUOUS IDENTIFICATION SIGNAL AND TRANSPONDER OPERATION AS RE-

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# JOINT MESSAGEFORM-CONTINUATION SHEET

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FROM:

CHIEF, AFBMD VAFB FIELD OFFICE, VANDENBERG AFB, CALIF

QUIRED FOR TRACKING AND COMMAND BY GROUND STATIONS.

(G) THE DISCOVERER PAYLOAD SYSTEM MUST WITHSTAND THE LAUNCH AND ASCENT FLIGHT ENVIRONMENT.

(H) THE GROUND SUPPORT EQUIPMENT MUST SATISFACTORILY CHECK OUT THE DISCOVERER BOOSTER AND ORBITAL STAGE.

(I) THE DISCOVERER SYSTEM FACILITIES MUST PROVIDE ADEQUATE DATA RECORDS AND NECESSARY COMMUNICATIONS.

3. A PRELIMINARY EVALUATION OF ACHIEVEMENT OF LAUNCH TEST OBJECTIVES FOLLOWS:

(A) OBJECTIVE ACHIEVED (THOR BOOSTER).

MECO AND VECO OCCURRED SIMULTANEOUSLY AT T+162 SEC. A 20 CPS VIBRATION (LONGITUDINAL AND LATERAL) OCCURRED BETWEEN T+130 SEC AND T+161. THE APPROXIMATE MAXIMUM MAGNITUDE OF THE VIBRATION SHOWN ON AGENA INSTRUMENTATION WAS 0.9 G'S LONGITUDINAL AND 1.0 G'S LATERAL.

(B) OBJECTIVE ACHIEVED (AGENA AIRFRAME).

NO EVIDENCE OF STRUCTURAL FAILURE HAS BEEN NOTED.

(C) OBJECTIVE NOT ACHIEVED (SEPARATION AND AGENA IGNITION).

NEITHER RETRO-ROCKET IGNITION NOR AGENA PROPULSION SYSTEM IGNITION OCCURRED APPARENTLY BECAUSE OF LACK OF THE INITIATING SIGNAL FROM THE SS/D TIMER.

(D) OBJECTIVE ACHIEVED (AGENA POWER SUPPLY).

OUTPUT FROM ALL ELECTRICAL POWER SOURCES APPEARS TO BE SATISFACTORY.

(E) OBJECTIVE PARTIALLY ACHIEVED (AGENA GUIDANCE, FLIGHT CONTROL).

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# JOINT MESSAGEFORM - CONTINUATION SHEET

FROM: CHIEF, AFMMD VAFB FIELD OFFICE, VANDENBERG AFB, CALIF.

THE GUIDANCE AND FLIGHT CONTROL SYSTEM DERIVED THE TIME TO INITIATE ORBITAL BOOST AND VELOCITY-TO-BE-GAINED. COMMAND 5 OF 18.5 SEC AND COMMAND 6 OF 12 SEC WERE TRANSMITTED AND RECEIVED AT THE VEHICLE. THE TIMER SIGNALS TO INITIATE SEPARATION AND ORBITAL BOOST WERE APPARENTLY NOT GENERATED. AGENA ATTITUDE CONTROL CANNOT BE EVALUATED BECAUSE OF FAILURE TO SEPARATE.

(F) OBJECTIVE ACHIEVED. (TRACKING AND COMMUNICATIONS).

THE ACQUISITION BEACON WAS TRACKED FROM LIFT-OFF TO T/540 SEC. THE S-BAND BEACON WAS TRACKED FROM LIFT-OFF TO T/530 SEC BY THE VAFB AND PT MUGU VERLORT RADARS. COMMANDS 5 AND 6 WERE TRANSMITTED BY THE PT MUGU VERLORT AND WERE RECEIVED BY THE VEHICLE.

(G) OBJECTIVE ACHIEVED (PAYLOAD ENVIRONMENT).

NO LARGE EXCURSIONS WERE NOTED IN THE TELEMETERED PAYLOAD DATA.

(H) GROUND SUPPORT EQUIPMENT.

COUNTDOWN CHECKS WERE SATISFACTORILY COMPLETED. EVALUATION OF INFLIGHT DISCREPANCIES HAS NOT BEEN COMPLETED.

(I) OBJECTIVE ACHIEVED (DATA).

TELEMETRY DATA WAS RECEIVED FROM LIFT-OFF TO T/540 SEC BY THE VAFB TLM-18. BECAUSE OF THE LOW TRAJECTORY, THE DOWNRANGE TELEMETRY SHIP RECEIVED SIGNAL FOR ONLY 15 SEC.

3. DURING BOOST PHASE, THE VEHICLE TRAJECTORY WAS ALONG THE DESIRED 172 DEGREES AZIMUTH AND SLIGHTLY HIGH. BECAUSE OF THE FAILURE TO SEPARATE, THE VEHICLE TRAJECTORY AFTER MECO WAS ESSENTIALLY BALLISTIC.

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# JOINT MESSAGEFORM - CONTINUATION SHEET

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FROM:

CHIEF, AFROD VAFB FIELD OFFICE, VANDENBERG AFB, CALIF

4. HOLDS DURING THE COUNTDOWN WERE DUE TO A DESTRUCT BATTERY FAILURE, AN ACID TRUCK MALFUNCTION, WORK CATCH-UP, AND RANGE CLEARANCE (TRAINS IN AREA). TOTAL HOLD TIME WAS ONE HOUR AND TWENTY-SIX MINUTES.

5. PAD DAMAGE WAS SLIGHTLY GREATER THAN FROM PREVIOUS DISCOVERER LAUNCHES ALTHOUGH NOT SEVERE. RECOVERY TIME ESTIMATED TO BE FIVE DAYS.

6. LAUNCH WAS ACCOMPLISHED ON SECOND ATTEMPT. PREVIOUS COUNTDOWN ON 25 OCTOBER 1960 WAS TERMINATED BECAUSE OF SUSPECTED MALFUNCTION IN THE PAYLOAD TELEMETRY.

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